

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A communication system ~~which comprises~~ comprising:
a plurality of communication terminals ~~and based on a~~ including a first
communication terminal to broadcast a route request message originated from a first
~~communication terminal~~ to a third communication terminal via a second communication
terminal, the second and third communication terminals create a route to the first
communication terminal and communication is made between the first and third
communication terminals via the created route~~[[,]]; and~~

 ~~wherein~~ the second and third communication terminals ~~comprise~~ including:

 route creation means for creating a plurality of the routes to the first communication
terminal by upon reception of the route request message and determination that the route
request message was not previously received, broadcasting the route request message to each
terminal included in the plurality of terminals to duplicatively receiving receive the route
request message; and

 route management means for storing and managing the plurality of routes created by
the route creation means, and

 the route management means establishes one of the created routes as a communication
route to the first communication terminal and changes the communication route to any of the
plurality of routes depending on needs.

2. (Original) The communication system according to claim 1,

 wherein the route management means specifies a priority for each of the created
routes based on a specified criterion and preferentially establishes the route with the high
priority as the communication route.

3. (Currently Amended) A communication terminal device comprising:

transmission means for transmitting a specified message assigned with an intended first communication terminal as transmission destination;

route creation means for duplicatively receiving a response to the message originated from the first communication terminal and transferred via a second communication terminal to create a plurality of routes up to the first communication terminal, the plurality of routes created by, upon reception of the message and determination that the message was not previously received, broadcasting the message to each terminal in communication with the communication terminal device;

route management means for storing the plurality of routes created by the route creation means and establishing one of the plurality of routes as a communication route; and

communication means for communicating with the first communication terminal via the established communication route,

wherein the route management means switches the communication route to any of the plurality of routes depending on needs.

4. (Original) The communication terminal device according to claim 3,

wherein the communication means starts communication with the first communication terminal after the route creation means receives the first response and a specified time interval elapses, or after reception of a specified number of the responses from the first communication terminal.

5. (Original) The communication terminal device according to claim 3,
wherein the route management means specifies a priority for each of the created routes based on a specified criterion and preferentially establishes the route with the high priority as the communication route.

6. (Original) The communication terminal device according to claim 3,
wherein the route management means lists to manage specified information about the created routes.

7. (Original) The communication terminal device according to claim 4,
wherein the route management means dynamically changes the criterion depending on a communication situation of the route and reassigns the priority to the created route.

8. (Original) The communication terminal device according to claim 3,
wherein the route management means deletes a route which belongs to the plurality of created routes and is unused for a specified time period.

9. (Original) The communication terminal device according to claim 3,
wherein, when the created routes exceed a predetermined maximum value, the route management means successively deletes the routes in a chronological order.

10. (Currently Amended) A control method for a communication terminal device comprising:

a first step of transmitting a specified message assigned with an intended first communication terminal as transmission destination;

a second step of duplicatively receiving a response to the message originated from the first communication terminal and transferred via a second communication terminal to create a plurality of routes up to the first communication terminal, the plurality of routes created by, upon reception of the message and determination that the message was not previously received, broadcasting the message to each terminal in communication with the communication terminal device; and

a third step of establishing one of the plurality of routes as a communication route and communicating with the first communication terminal via the communication route,

wherein the third step switches the communication route to any of the plurality of routes depending on needs.

11. (Currently Amended) A non-transitory computer readable storage medium on which is recorded a program which, when executed in a processor, directs the processor to perform a process comprising:

a first step of transmitting a specified message assigned with an intended first communication terminal as transmission destination;

a second step of duplicatively receiving a response to the message originated from the first communication terminal and transferred via a second communication terminal to create a plurality of routes up to the first communication terminal, the plurality of routes created by, upon reception of the message and determination that the message was not previously received, broadcasting the message to each terminal in communication with the first communication terminal; and

a third step of establishing one of the plurality of routes as a communication route, communicating with the first communication terminal via the communication route and switching the communication route to any of the plurality of routes depending on needs.

12. (Currently Amended) A communication terminal device which relays a route request message originated from a first communication terminal to a second communication terminal and creates a route to the first communication terminal based on the route request message, the communication terminal device comprising:

route creation means for creating a plurality of the routes to the first communication terminal by, upon reception of the route request message and determination that the route request message was not received, broadcasting the route request message to each terminal in communication with the communication terminal device to duplicatively receiving receive the route request message; and

route management means for storing and managing the plurality of routes created by the route creation means,

wherein the route management means establishes one of the created routes as a communication route to the first communication terminal and changes the communication route to any of the plurality of routes depending on needs.

13. (Currently Amended) A control method for a communication terminal device which relays a route request message originated from a first communication terminal to a second communication terminal and creates a route to the first communication terminal based on the message, the control method comprising:

a first step of creating a plurality of the routes to the first communication terminal by, upon reception of the route request message and determination that the route request message was not received, broadcasting the route request message to each terminal in communication with the communication terminal device to duplicatively receiving receive the route request message; and

a second step of storing and managing the plurality of routes, and

the second step establishes one of the created routes as a communication route to the first communication terminal and changes the communication route to any of the plurality of routes depending on needs.

14. (Currently Amended) A communication system ~~which comprises~~ comprising:

a plurality of communication terminals, and based on a first message originated from a first communication terminal to a third communication terminal via a second communication terminal and a second message originated from ~~[[a]]~~ the first communication terminal in response to the first message to the first communication terminal via the second communication terminal, creates routes to the first through third communication terminals by using the first through third communication terminals to communicate between the first and third communication terminals via the created routes,

wherein the first communication terminal has route request transmission means for transmitting a route request composed of a request for the route to be used for the communication with the third communication terminal, and

the second and third communication terminals have:

route creation means for duplicatively receiving the first or second message to create the plurality of routes to the first or third communication terminal, the plurality of routes created by, upon reception of the first or second message and determination that the received first or received second message was not previously received, broadcasting the received first or received second message to each terminal included in the plurality of terminals; and

route establishment means for establishing a communication route between the first and third communication terminals using a route which belongs to the plurality of routes

created by the route creation means and satisfies the route request transmitted from the first communication terminal.

15. (Original) The communication system according to claim 14,
the route request transmission means for the first communication terminal transmits the route request corresponding to an attribute of data to be transmitted to the third communication terminal according to the communication.

16. (Original) The communication system according to claim 14,
wherein the third communication terminal has response origination means for originating a response corresponding to the route request when the route request is received;
wherein the first communication terminal has route establishment means for establishing the communication route to the third communication terminal using the route satisfying the route request based on the response transmitted from the third communication terminal via the second communication terminal, and

the route establishment means for the first through third communication terminals individually establishes the communication route from the first communication terminal to the third communication terminal and the communication route from third communication terminal to the first communication terminal so as to be different from each other based on the route request and the response to the route request.

17. (Original) The communication system according to claim 14,
wherein route request transmission means for the first communication terminal transmits the route request to update lifetime of the route, and

the route establishment means for the second and third communication terminals
update the lifetime for the corresponding route in accordance with the route request.

18. (Original) The communication system according to claim 14,
wherein, when retransmitting the route request, the route request transmission means
for the first communication terminal changes to relieve conditions specified as the route
request.

19. (Currently Amended) A communication terminal device comprising:
transmission means for transmitting a specified first message assigned with an
intended first communication terminal as transmission destination;
route creation means for creating a plurality of routes to the first communication
terminal by, upon reception of the first message and determination that the first message was
not previously received, broadcasting the first message to each terminal in communication
with the communication terminal device to duplicatively receive the first message; and
route request transmission means for using the first communication terminal as
transmission destination and for transmitting a route request composed of a request for one of
the routes to be used for communication with the first communication terminal.

20. (Original) The communication terminal device according to claim 19,
wherein the route request transmission means transmits the route request
corresponding to an attribute of data to be transmitted to the first communication terminal.

21. (Original) The communication terminal device according to claim 19,
wherein, when retransmitting the route request, the route request transmission means changes to relieve a request for the route.

22. (Currently Amended) A communication terminal device comprising:
route creation means for duplicatively receiving a first message originated from a first communication terminal or a second message originated from a second communication terminal in response to the first message to create a plurality of routes to the first and second communication terminals, the plurality of routes created by, upon reception of the first or second message and determination that the received first or received second message was not previously received, broadcasting the received first or received second message to each terminal in communication with the communication terminal device; and

route establishment means for establishing a communication route between the first and third communication terminals using the route which belongs to the plurality of routes created by the route creation means and satisfies the route request based on a route request originated from the first communication terminal and composed of a request for the route to be used for communication with the second communication terminal.

23. (Original) The communication terminal device according to claim 22,
wherein the route establishment means individually establishes the communication route from the first communication terminal to the second communication terminal and the communication route from second communication terminal to the first communication terminal so as to be different from each other based on the route request and a response originated from the second communication terminal in response to the route request.

24. (Original) The communication terminal device according to claim 22,
wherein the route establishment means updates lifetime of the corresponding route
based on the route request.

25. (Currently Amended) A control method for a communication terminal device,
comprising:

a first step of duplicatively receiving a first message originated from a first
communication terminal or a second message originated from a second communication
terminal in response to the first message to create a plurality of routes to the first and second
communication terminals, the plurality of routes created by, upon reception of the first or
second message and determination that the received first or received second message was not
previously received, broadcasting the received first or received second message to each
terminal in communication with the communication terminal device; and

a second step of establishing a communication route between the first and third
communication terminals using the route which belongs to the plurality of created routes and
satisfies the route request based on a route request originated from the first communication
terminal and composed of a request for the route to be used for communication with the
second communication terminal.

26. (Currently Amended) A communication terminal device comprising:
route creation means for duplicatively receiving a first message originated from a first
communication terminal to itself as destination to create a plurality of routes to the first
communication terminal, the plurality of routes created by, upon reception of the message
and determination that the message was not previously received, broadcasting the message to
each terminal in communication with the communication terminal device; and

route establishment means for establishing a communication route to the first communication terminal using the route which belongs to the plurality of routes created by the route creation means and satisfies the route request based on a route request originated from the first communication terminal and composed of a request for the route to be used for communication with itself.

27. (Previously Presented) A communication system comprising:

a plurality of communication terminals, and based on a message originated from a first communication terminal to a third communication terminal via a second communication terminal, creates routes to the first communication terminal by using the second and third communication terminals to communicate between the first and third communication terminals via the created route,

wherein the second communication terminal has state notification means for detecting a possible disconnection state in terms of a disconnection symptom for communication on the route as an upstream side for the message and notifying the possible disconnection state to the first communication terminal, and

the first communication terminal has message origination means for generating the message using a creation condition according to a route other than the route matching the possible disconnection state notified from the second communication terminal and originating the message.

28. (Original) The communication system according to claim 27,

wherein the state notification means detects the possible disconnection state based on at least two different communication criteria.

29. (Original) The communication system according to claim 27,
wherein the state notification means limits the number of the possible disconnection states notified to the first communication terminal at a specified ratio.

30. (Original) The communication system according to claim 27,
wherein the message origination means generates the message using a creating condition according to the route in a better condition than the possible disconnection state.

31. (Original) The communication system according to claim 27,
wherein the message origination means measures the number of notifications of the possible disconnection state notified from the second communication terminal on a unit time basis and, when a measurement result exceeds a specified number of times, generates the message using a creation condition according to a route other than the route.

32. (Original) The communication system according to claim 31,
wherein the message origination means measures the number of notifications of the possible disconnection state notified from the second communication terminal on a unit time basis and, when a measurement result exceeds a specified number of times, generates the message using a creation condition according to a route in a better state than statistical results of the possible disconnection states corresponding to the number of notifications.

33. (Previously Presented) A communication terminal device which mediates between a first communication terminal as a transmission origin and a second communication terminal as a transmission destination and based on a message originated from the first communication

terminal to the second communication terminal, creates routes to first communication terminal, the communication terminal device comprising:

state notification means for detecting a possible disconnection state in terms of a disconnection symptom for communication on the routes as an upstream side for the message and notifying the possible disconnection state to the first communication terminal.

34. (Original) The communication terminal device according to claim 33, wherein the state notification means detects the possible disconnection state based on at least two different communication criteria.

35. (Previously Presented) The communication terminal device according to claim 33, wherein the state notification means limits the number of the possible disconnection states notified to the first communication terminal at a specified ratio.

36. (Previously Presented) A communication method for a communication terminal device which mediates between a first communication terminal as a transmission origin and a second communication terminal as a transmission destination and based on a message originated from the first communication terminal to the second communication terminal, creates routes to the first communication terminal, the communication method comprising:

a first step of detecting a possible disconnection state in terms of a disconnection symptom for communication on the routes as an upstream side for the message; and

a second step of notifying the possible disconnection state detected by the first step to the first communication terminal.

37. (Previously Presented) A communication terminal device which, based on a message originated from itself to a first communication terminal as a transmission destination, creates routes to itself by means of a second communication terminal mediating between itself and a first communication terminal and communicates with first communication terminal via one of the created routes, the communication terminal device comprising:

message origination means for, when the second communication terminal notifies a possible disconnection state in terms of a disconnection symptom for communication on a first route upstream of the message, generating the message using a creation condition according to a second route other than the first route matching the possible disconnection state and originating the message.

38. (Previously Presented) The communication terminal device according to claim 37, wherein the message origination means generates the message using a creating condition according to the second route in a better condition than the possible disconnection state.

39. (Previously Presented) The communication terminal device according to claim 37, wherein the message origination means measures the number of notifications of the possible disconnection state notified from the mediating communication terminal on a unit time basis and, when a measurement result exceeds a specified number of times, generates the message using a creation condition according to a third route other than the first route.

40. (Previously Presented) The communication terminal device according to claim 39, wherein the message origination means measures the number of notifications of the possible disconnection state notified from the mediating communication terminal on a unit time basis and, when a measurement result exceeds a specified number of times, generates the message using a creation condition according to a fourth route in a better state than statistical results of the possible disconnection states corresponding to the number of notifications.

41. (Previously Presented) A communication method for a communication terminal device which, based on a message originated from itself to a first communication terminal as a transmission destination, creates routes to itself by means of a second communication terminal mediating between itself and the first communication terminal and communicates with the first communication terminal via one of the created routes, the communication method comprising:

a first step of, when the mediating communication terminal notifies a possible disconnection state in terms of a disconnection symptom for communication on a first route upstream of the message, generating the message using a creation condition according to a second route other than the first route matching the possible disconnection state; and

a second step of originating the message generated by the first step.

42. (Previously Presented) A non-transitory computer readable storage medium on which is recorded a program which, when executed in a communication terminal device, directs the communication terminal device to mediate between a first communication terminal as a transmission origin and a second communication terminal as a transmission destination and, based on a message originated from the first communication terminal to the

second communication terminal, create routes to the communication terminal as transmission origin, the program comprising:

- a first step of detecting a possible disconnection state in terms of a disconnection symptom for communication on a first route as an upstream side for the message; and
- a second step of notifying the possible disconnection state detected by the first step to the first communication terminal.

43. (Previously Presented) A non-transitory computer readable storage medium on which is recorded a program which, when executed in a communication terminal device, directs the communication terminal device, based on a message originated from itself to a first communication terminal as a transmission destination, to create routes to itself by means of a second communication terminal mediating between itself and the first communication terminal and to communicate with the first communication terminal via one of the created routes, the program comprising:

- a first step of, when the mediating communication terminal notifies a possible disconnection state in terms of a disconnection symptom for communication on a first route upstream of the message, generating the message using a creation condition according to a second route other than the first route matching the possible disconnection state; and
- a second step of originating the message generated by the first step.